MAR 27 1946

flexicore*

floor and roof slab

for industrial, commercial, institutional, residential and agricultural building

The precast, precured, hollow-cast concrete slab with prestressed-steel reinforcement

*A development of Price Brothers Co., Dayton, Ohio

THE FLEXICORE CO., INC., NEW YORK 17, N. Y.

10 IMPORTANT ADVANTAGES

YOU GET WITH...

flexicore CONSTRUCTION

FOR ANY BUILDING STRUCTURE

FLEXICORE Floor and Roof Slab strengthens . . . fireproofs . . . insulates . . . saves time, material and space . . . slab lengths up to 22 feet, 6 inches.

1 **flexicore** Floor and Roof Slab carries live loads up to 200 lbs. per sq. ft. on 10 ft. span with prestressed-steel reinforcement for extra rigidity. Longer spans available for lighter loading such as 22 ft. span for 40 lbs. per sq. ft. (See chart Page 5.)

2 **flexicore** is provided in lengths for clear spans up to 22 ft. with slab depth of only 6". Simple unit construction eliminates need for special building design. Can be cantilevered for modern architectural treatment.

3 **flexicore** offers unusual fire protection for its weight . . . D-2 underwriters' rating.

4 **flexicore** hollow-cast construction provides added sound and thermal insulation.

5 **flexicore** greatly reduces installation time, since slabs are precast, precured and may be quickly laid in all kinds of weather. Provides immediate working deck for other installations.

6 **flexicore** allows a 4" to 6" saving in height of walls, per floor, over commonly used joist type of construction.

7 Built-in ducts in **flexicore** reduce weight nearly 50% over solid slabs without sacrifice of strength. In addition, **flexicore** hollow-cast construction facilitates installation of utilities, panel-type heating, cold air returns, etc.

8 Smooth, glazed **flexicore** undersurface eliminates finishing . . . provides beautiful ceiling ready for painting.

9 After a simple grinding operation **flexicore** provides a very true floor surface . . . for linoleum, asphalt-tile . . . can be used without covering also. A thin underlayment may be used instead of grinding. (See page 15 for details.)

10 **flexicore** Floor and Roof Slab is suitable for flat, arched, sawtooth or slanting roofs.

You'll find all the answers by using this reference guide

flexicore fact file INDEX

What is **flexicore**? Page 4

Where is it used? Page 6

How does it save installation time? Page 8

How is it used with utilities, etc.? Page 9

How is it applied? (WALL DETAILS) Page 10

How is it applied? (ROOF DETAILS) Page 12

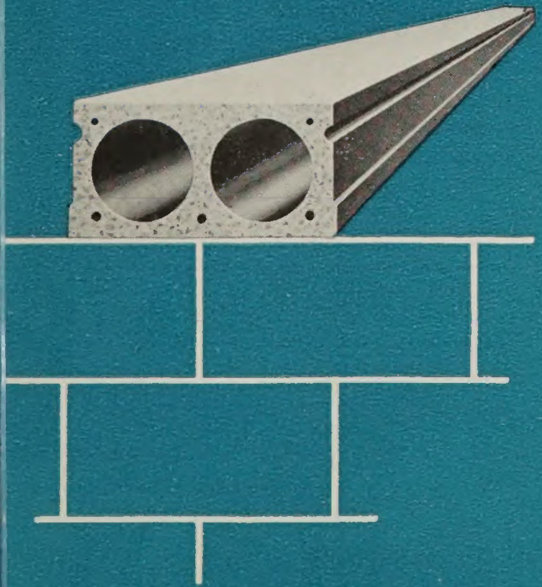
How is it applied? (FLOOR AND ROOF OPENINGS) Page 13

How is it applied? (PLUMBING AND WIRING DETAILS) Page 14

What about floor coverings? Page 15

How do you specify **flexicore**? Page 15

Other **flexicore** products? Page 16



flexicore floor and roof slab

What is it? ...the approved precast, precured, hollow, reinforced concrete unit for modern simplified construction, fireproofing and permanency.

single standard section

FLEXICORE Floor and Roof Slabs are precast in single standard sections readily adaptable to prevailing methods of building design and construction. Installation is simple, requiring no form work or pouring on the job. Furthermore the same section is used for both roofs and floors. Standard unit-type FLEXICORE slabs, thus make possible for the first time all the advantages of concrete construction for modern building; assuring security against fire, rot and termite destruction . . . greater strength and rigidity . . . freedom from warpage, shrinkage and squeaking . . . better insulation . . . permanency and long-time economy.

how processed

FLEXICORE Floor and Roof Slabs are manufactured and steam cured in central plants under ideal conditions by a unique patented process. Specially constructed rubber FLEXICORE tubes are inflated to form two circular cells so as to constitute approximately 50% of the cross section. (See cross-section blueprint on opposite page.) The slabs are cast in accurately constructed rigid steel forms and the concrete is thoroughly vibrated to assure maximum density and strength. The FLEXICORE tubing used in forming the cells transmits the vibration to the interior of the slabs to further improve concrete quality.

how reinforced

As shown in the diagram at the right, FLEXICORE slabs are reinforced by steel tension and compression bars and wire stirrups. The amount of reinforcing is dictated by skilled engineers and varies with the spans and the duty to be performed. A vitally important feature is the prestressing of the tension bars. This definitely controls the shape of the slab during curing and eliminates any shrinkage cracks. It also materially reduces deflection. The simple method of grouting and aligning FLEXICORE slabs together is explained with photographs on page 8.

dimensions

FLEXICORE slabs are 6″ x 12″ in cross section, and are produced in all lengths up to 22′ 6″. When laid and grouted together they form a single flat slab only 6″ thick.

weight and fire protection

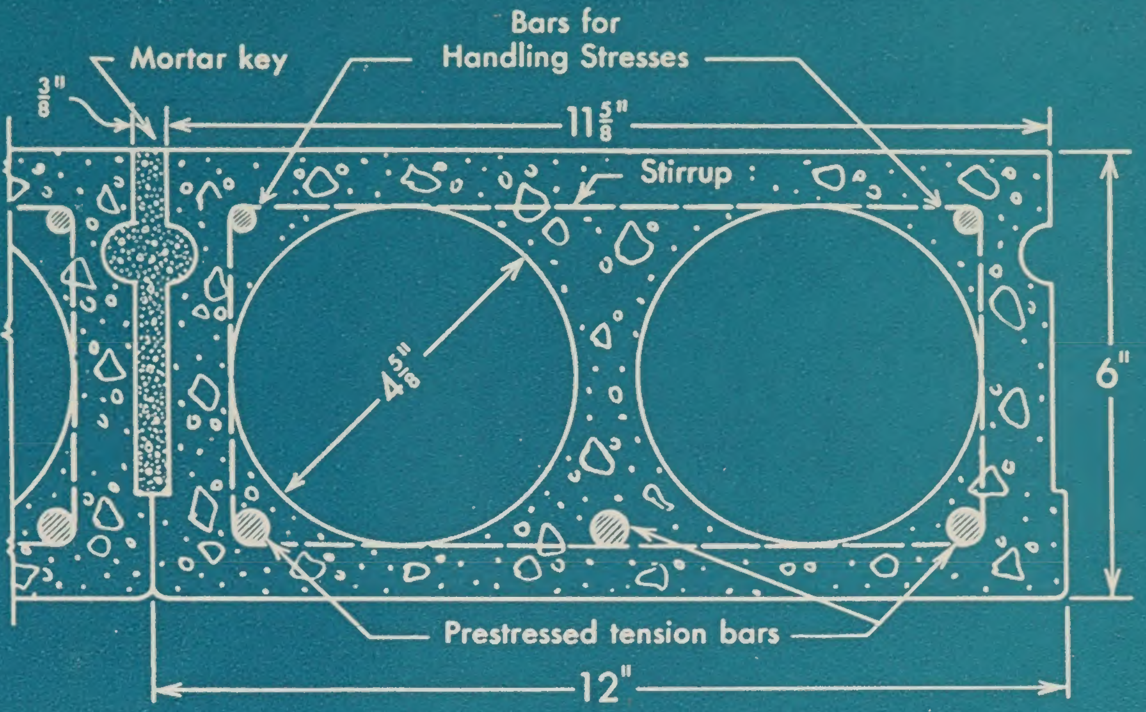
When made of gravel and stone aggregate, FLEXICORE slabs average 40 lbs. per sq. ft. including the grouted joint. Units may be obtained in concrete made with light weight aggregate which reduces weight to nearly 30 lbs. per sq. ft. The hollow-cast construction obtains the strength of a solid 6″ slab by using no more concrete than would be required for a 3″ slab. See "designed loads." For its weight and strength FLEXICORE slab offers maximum fire protection . . . D-2 underwriters' fire rating.

insulation

Sound transmission loss averages 38.6 decibles at frequencies of 129 to 2070 which means about 25% more quiet than wood flooring. Tests made to determine heat conductance indicate a valuation for "C" of .89 for slabs using lightweight aggregates and 1.25 for slabs using sand and stone aggregates. These insulating qualities are added advantages of FLEXICORE hollow-cast construction.

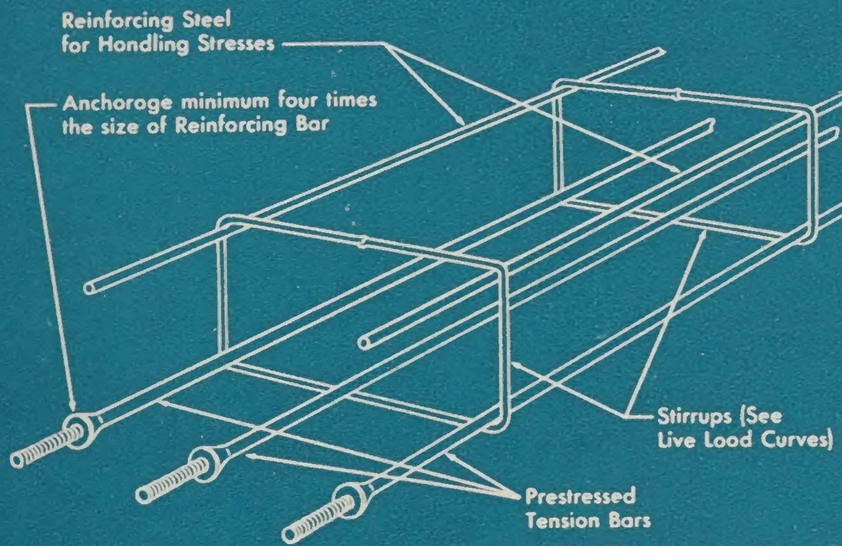
approved

FLEXICORE Floor and Roof Slabs have been extensively used and tested and meet all building requirements within the designed load limits. Several million square feet of FLEXICORE slabs have been installed in all kinds of buildings to date of this issue. Thousands of square feet are being installed every week.



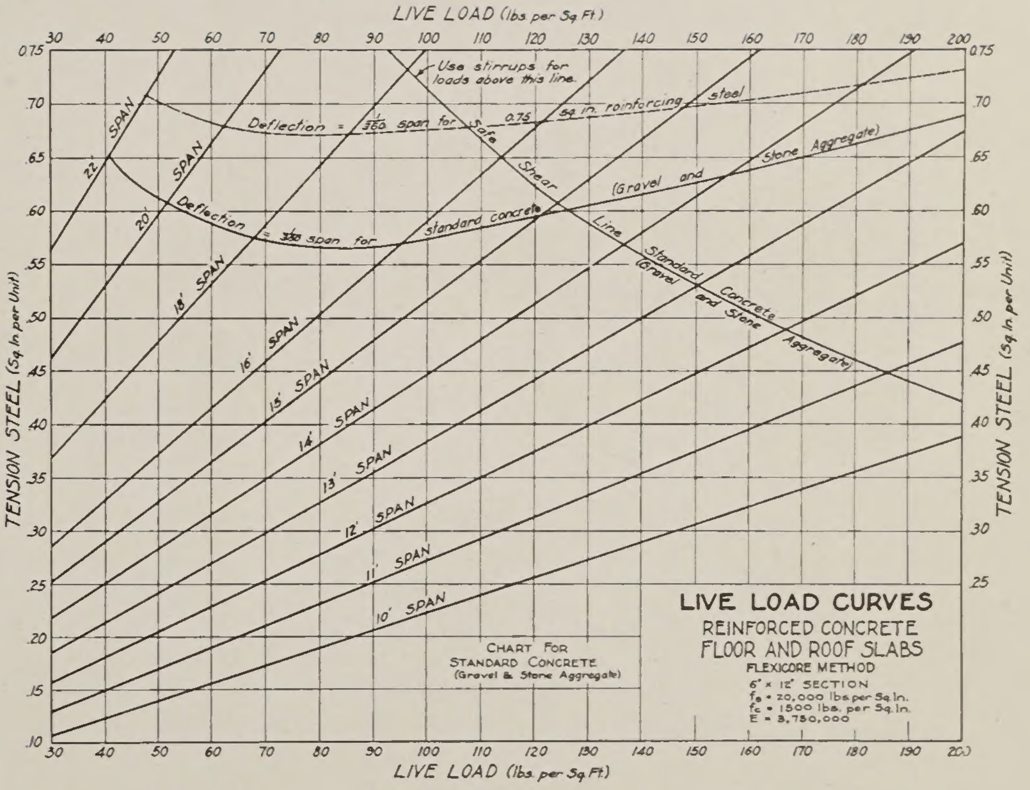
Section through FLEXICORE slab

Slabs available in lengths up to 22′ 6″



designed loads

The accompanying chart shows live loads safely carried by various spans, see horizontal scale. Tension reinforcing steel required per unit is shown in sq. inches on the vertical scale. A minimum of 3750 lbs. concrete used in manufacture permits an allowable working stress of 1500 lbs. per sq. in. A detailed explanation of this load chart and a method of figuring shear reinforcement may be obtained by writing The Flexicore Co., Inc., 220 East 42nd Street, New York 17, N. Y.

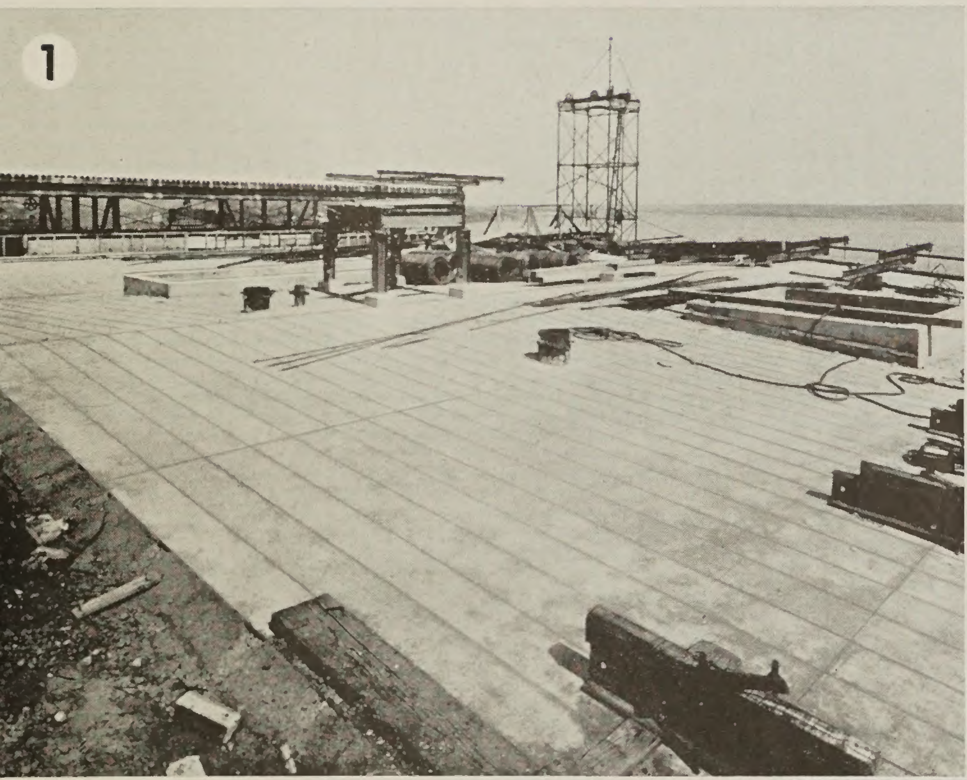


flexicore precast slabs

for ALL TYPES OF BUILDING CONSTRUCTION

- With wall bearing construction
- With structural steel or reinforced concrete structural frames
- As roof decking or roof slabs on all types of buildings
- For floor slabs of any building with light load requirements . . . with limitation to light load where long span is used

1



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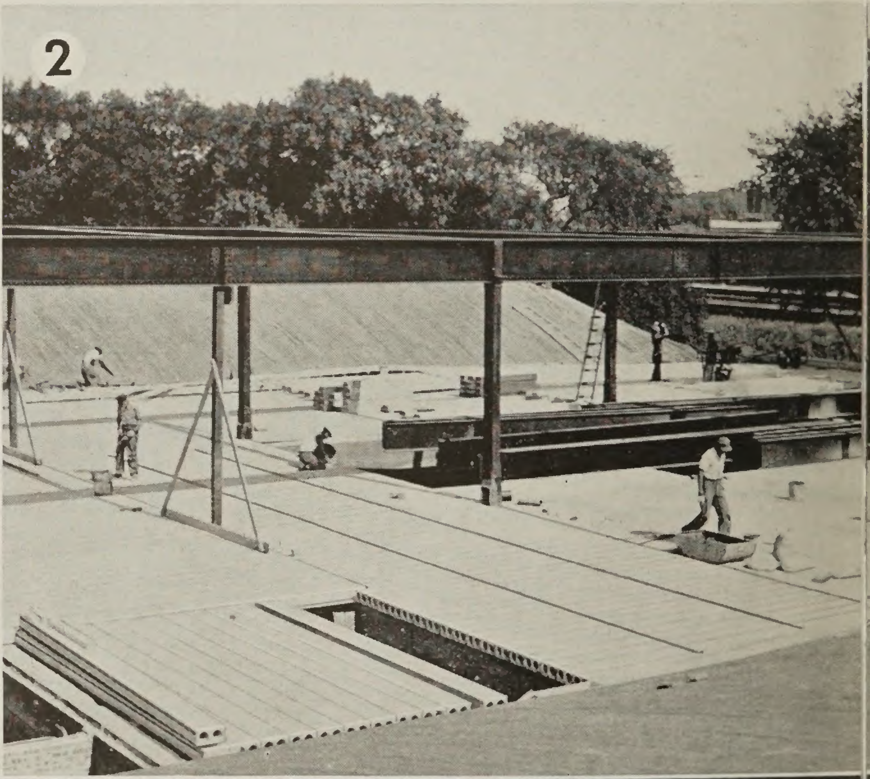

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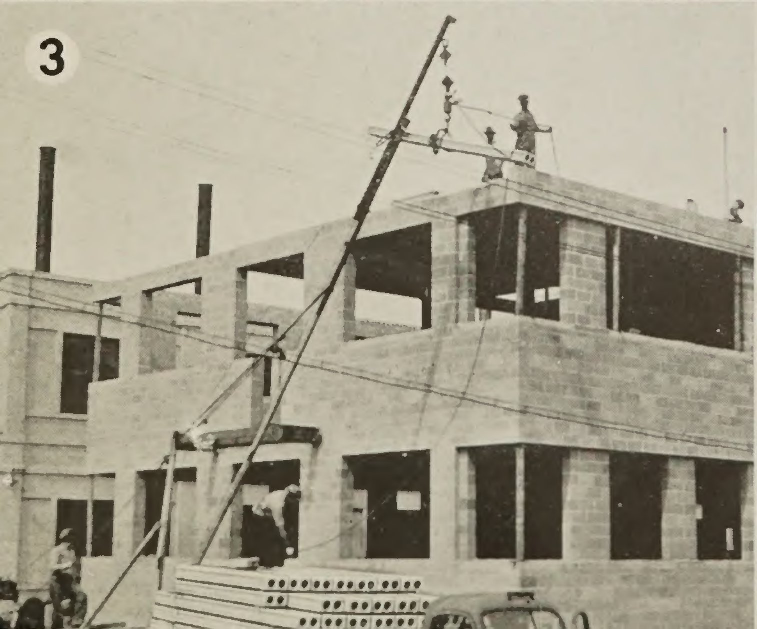

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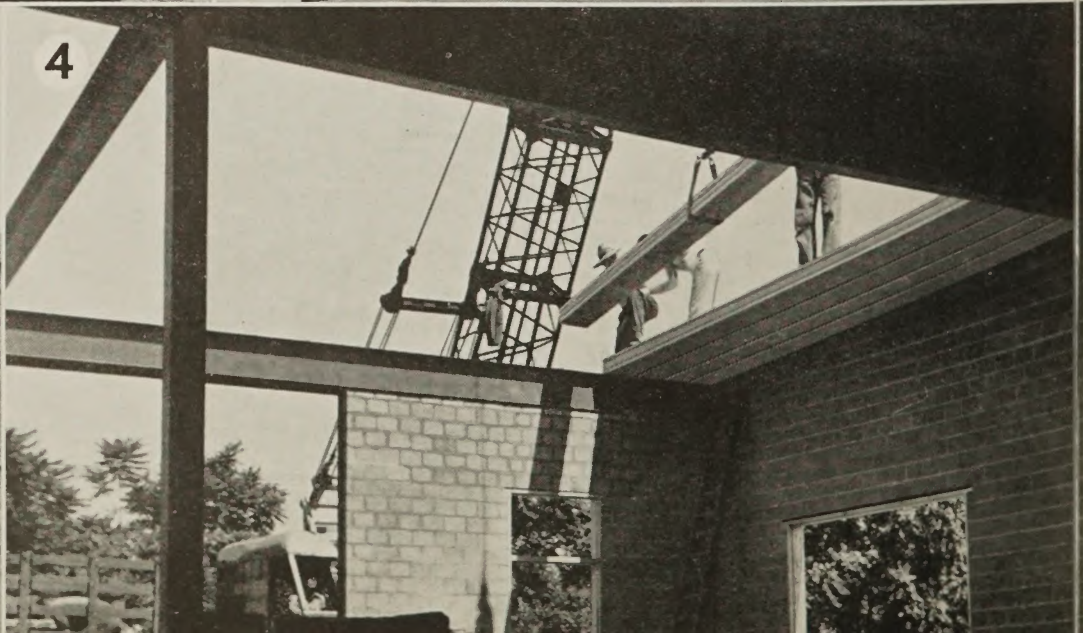
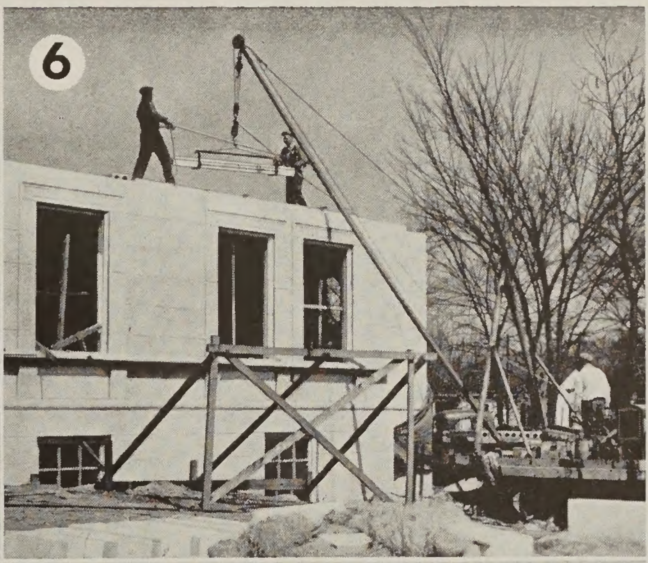
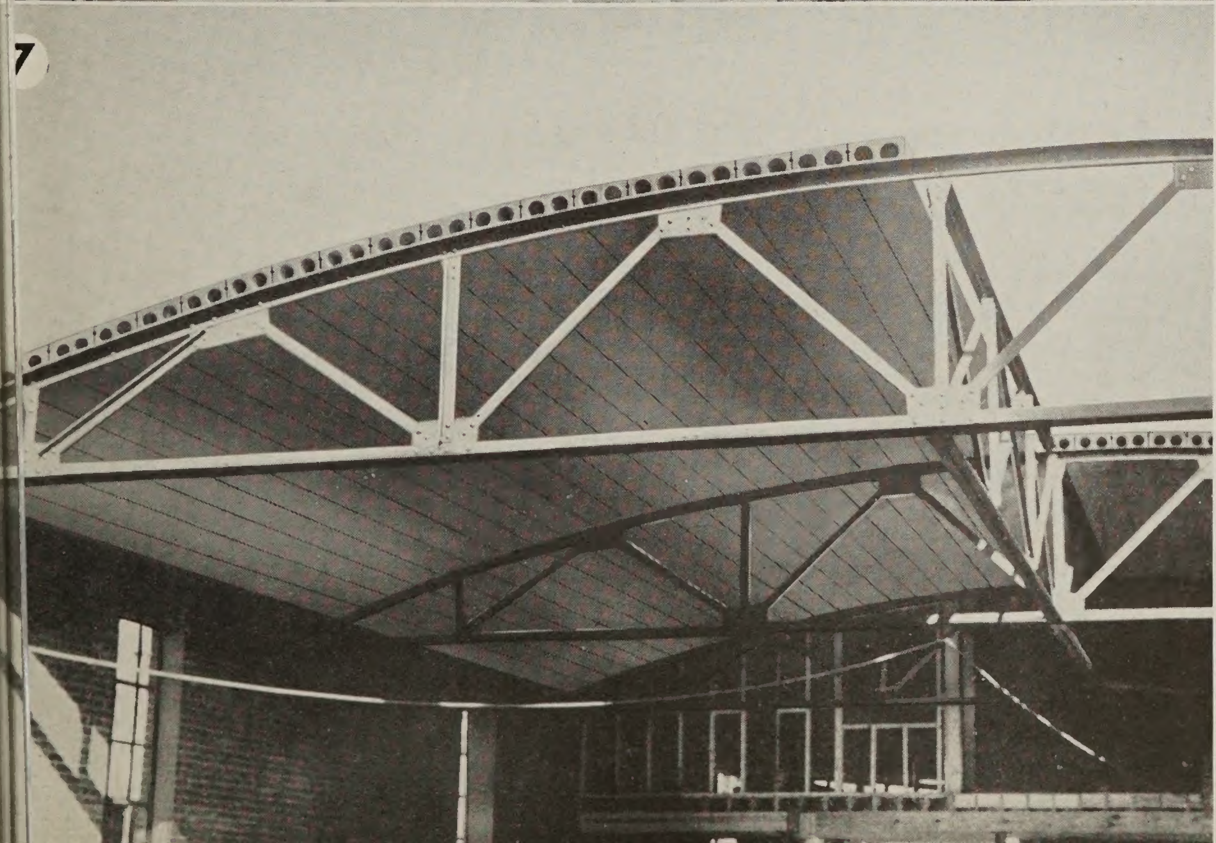


for wide use in INDUSTRIAL.. COMMERCIAL..INSTITUTIONAL..AGRICULTURAL and RESIDENTIAL BUILDINGS

Several million square feet of Flexicore have been installed for use in: industrial buildings, including power stations, factories, commercial buildings, hotels, recreation centers, service stations, stores; institutional buildings, including hospitals, asylums, laboratories, schools; public buildings; private residences and apartment buildings; agricultural buildings, barns, chicken houses, etc. In fact the application of Flexicore is unlimited except where heavy loads are to be encountered in long spans.

5


6

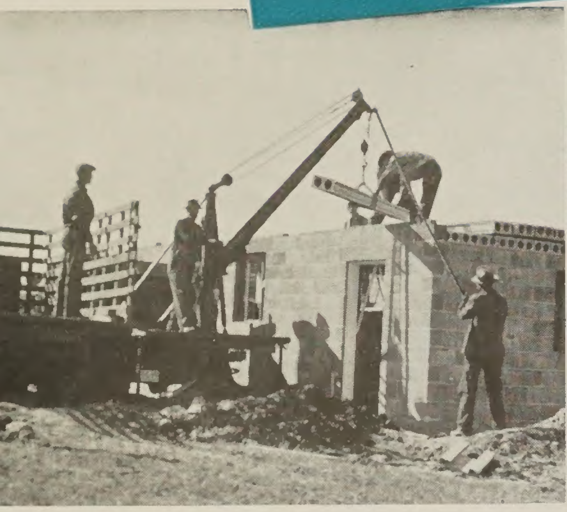

7

TYPICAL FLEXICORE INSTALLATIONS

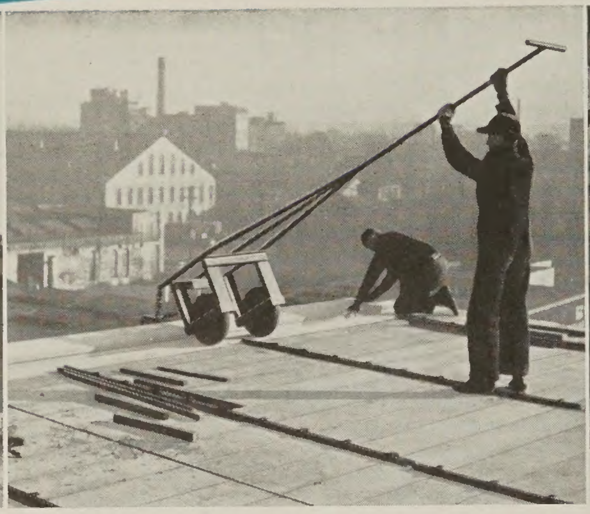
1. Pitched Flexicore roof for a power and light company in Peoria, Illinois.
2. Installing Flexicore floor in a modern dairy building; note stairwell in foreground.
3. Flexicore being installed in a Chicago, Illinois, apartment building.
4. Slabs of Flexicore laid on steel structure in single story industrial building.
5. Showing application of Flexicore to residential cast-stone construction. Chicago, Illinois.
6. Flexicore used for both floor and roof in this Gary, Indiana, hospital building.
7. Arched roof for Arkansas industrial building.

flexicore PRECAST SLAB...

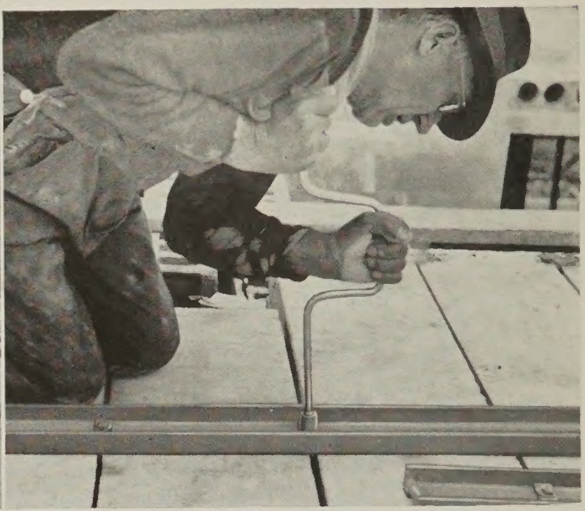
TO SPEED ERECTION . . .



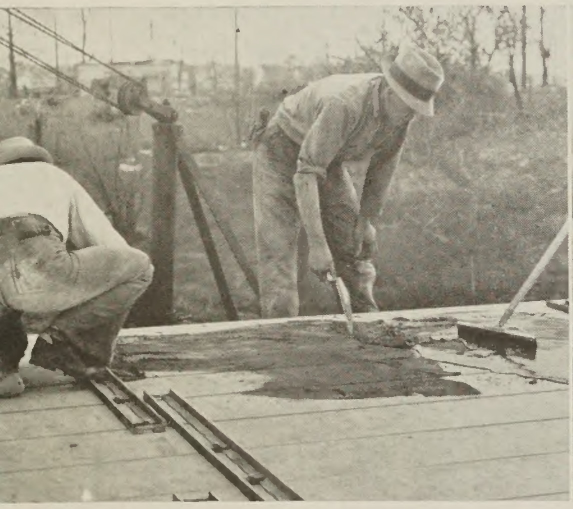
1 Flexicore Floor and Roof Slabs are quickly hoisted with crane or directly from specially equipped truck.



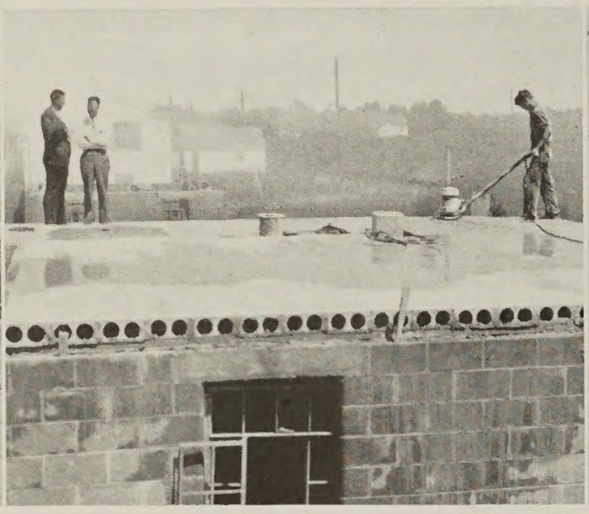
2 Dolly or cart greatly facilitates placing of Flexicore slab units ready for leveling and grouting.



3 Bolts are screwed into nuts placed in keyway between slabs and tightened against leveling members.



4 After slabs have been aligned and leveled, grout is worked into joints to form a mortar key . . . next day floor is ready for use . . . no waiting.



5 Leveling members are removed the next day. If floor is to be used without covering, Flexicore can be ground smoother with floor grinder.

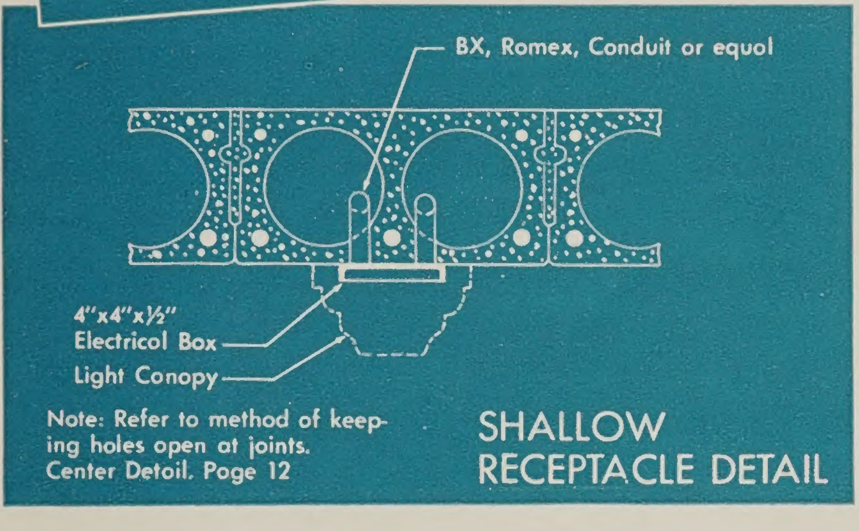
6 The undersides of Flexicore units are ready for immediate painting. Make an attractive ceiling...no need for plastering or other covering.

flexicore provides all these time-saving advantages

PLUS hollow-cast construction adaptability

meets all modern installation requirements!

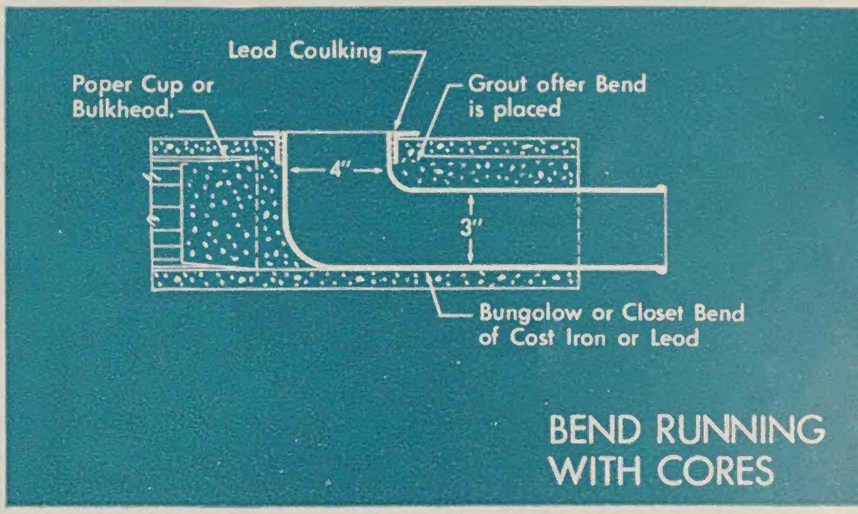
SIMPLIFIES INSTALLATION OF UTILITIES . . . FLOORING



Note: Refer to method of keeping holes open at joints. Center Detail, Page 12

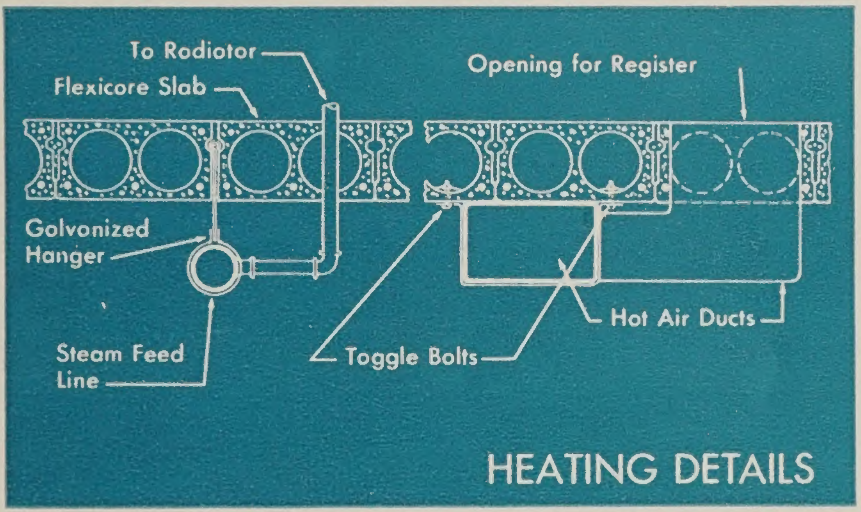
SHALLOW RECEPTACLE DETAIL

wiring Outlets may be cut through FLEXICORE Floor and Roof Slab at will . . . wires can be fished through at end of slabs from floor below, or outlet boxes can be attached to FLEXICORE slabs in the field with toggle bolts.


Lead Caulking
Paper Cup or Bulkhead.
Grout after Bend is placed
4"
3"
Bungalow or Closet Bend of Cast Iron or Lead

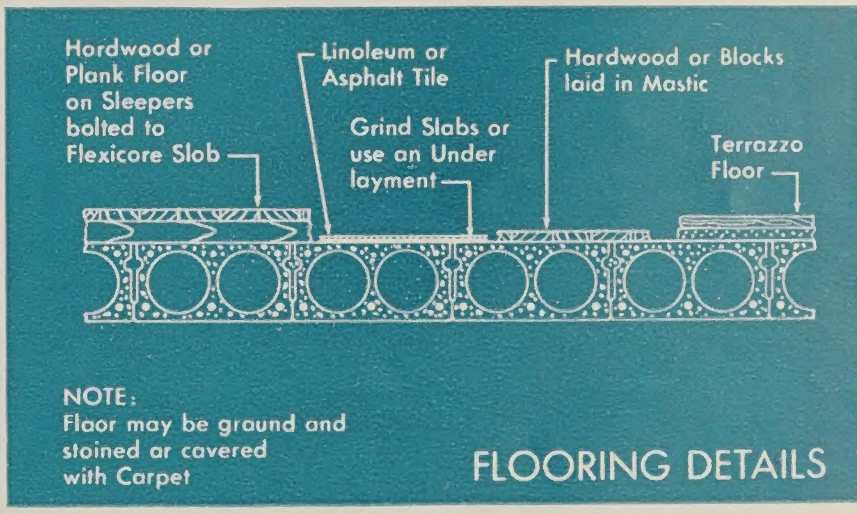
BEND RUNNING WITH CORES

plumbing Pipes for plumbing are easily installed, simply by cutting through FLEXICORE and pointing after installation. Closet bend can either run with core, as shown above, or across. Cutting through a core section is quickly accomplished.



HEATING DETAILS

heating Steam, hot water pipes or air ducts are quickly cut through FLEXICORE slabs for passage between floors and are held from ceiling with easily installed suspension hangers. See note below on panel heating.


Hardwood or Plank Floor on Sleepers bolted to Flexicore Slab
Linoleum or Asphalt Tile
Grind Slabs or use an Under layment
Hardwood or Blocks laid in Mastic
Terrazzo Floor

NOTE:
Floor may be ground and stained or covered with Carpet

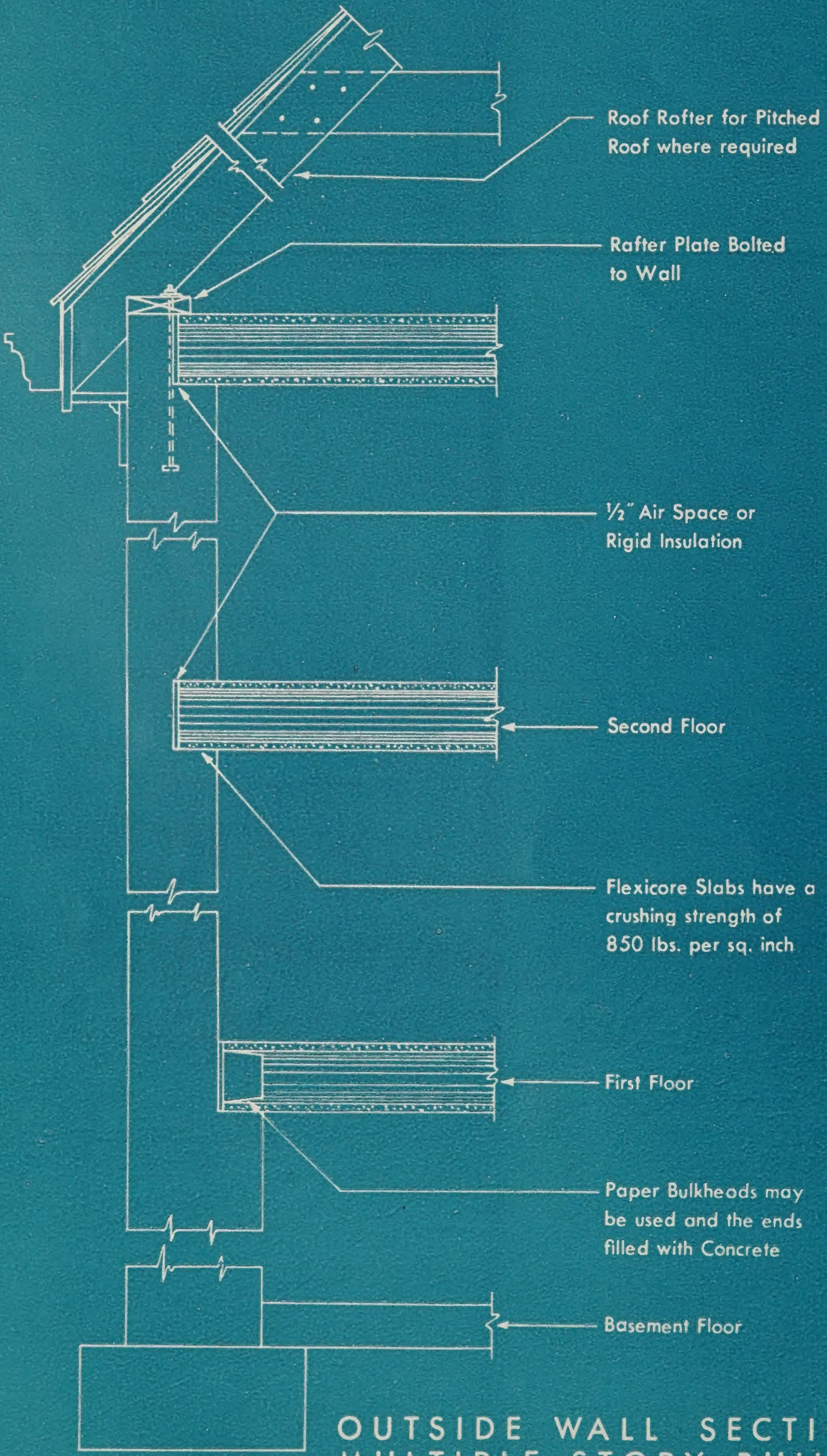
FLOORING DETAILS

flooring FLEXICORE floors present level surfaces ready for any type of floor covering including mastic bonded finishes, wood, rubber and asphalt-tile. See page 15 for details and photographs on FLEXICORE floors.

tomorrow's construction available today . . .

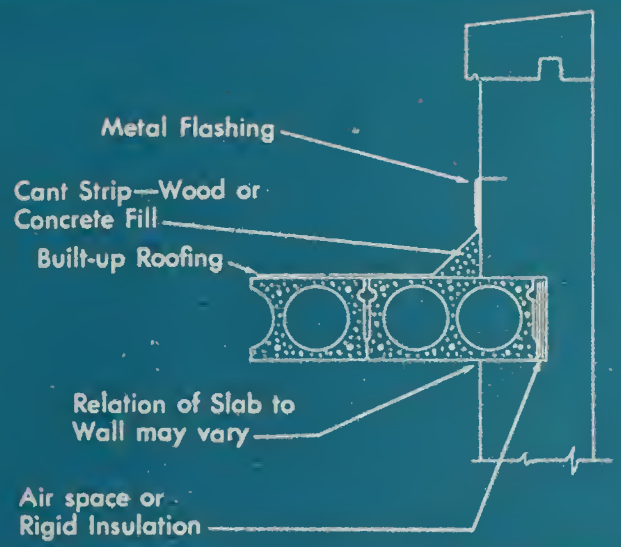
FLEXICORE Floor and Roof Slabs are made to order for modern design in building construction. In addition to its long-span-ability . . . its fireproofing . . . permanency . . . and fast installation . . . FLEXICORE hollow-cast design makes possible insulation and special adaptability for wiring and such things to come as panel floor heating. It is truly a modern material for modern America!

basic details for applying

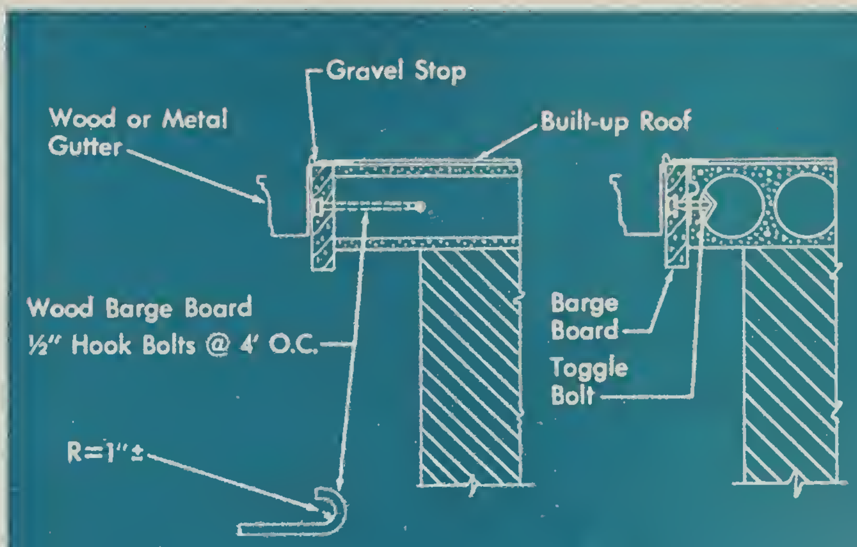

Roof Rafter for Pitched Roof where required
Rafter Plate Bolted to Wall
½" Air Space or Rigid Insulation
Second Floor
Flexicore Slabs have a crushing strength of 850 lbs. per sq. inch
First Floor
Paper Bulkheads may be used and the ends filled with Concrete
Basement Floor

OUTSIDE WALL SECTION
MULTIPLE STORY BUILDINGS

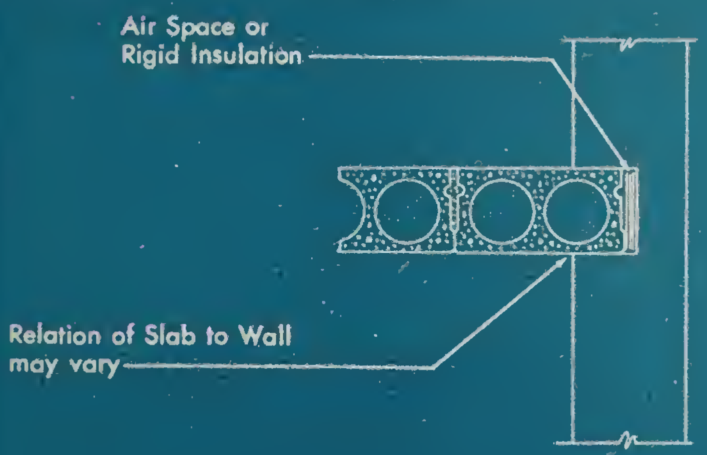
flexicore in all types of buildings


Metal Flashing
Cant Strip—Wood or Concrete Fill
Built-up Roofing
Relation of Slab to Wall may vary
Air space or Rigid Insulation

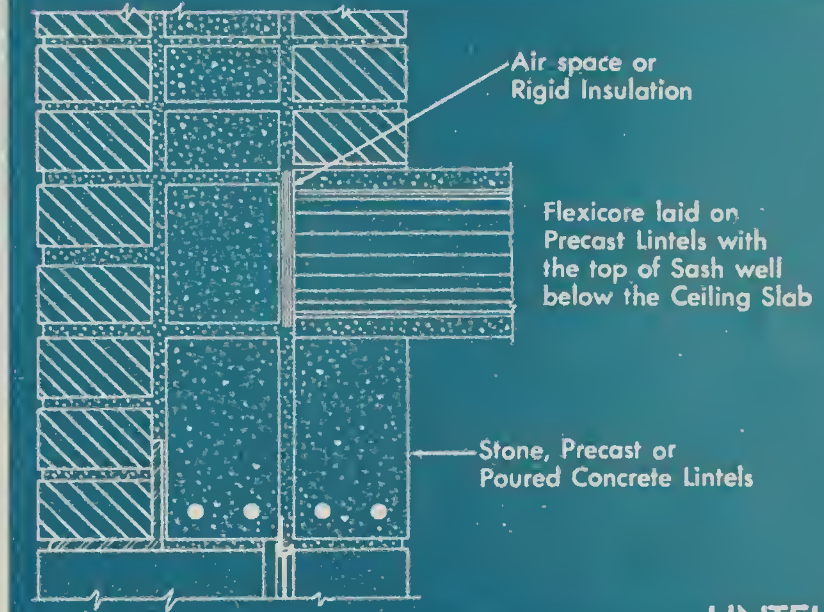
PARAPET WALL SECTION



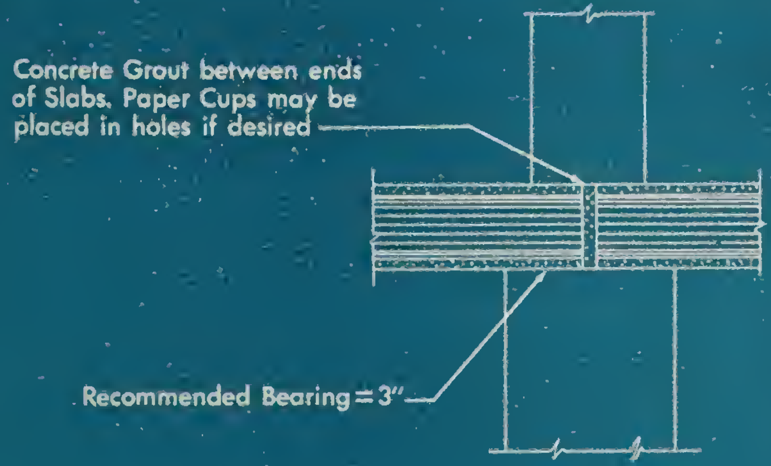
WOOD BARGE BOARD END OR SIDE


Air Space or Rigid Insulation
Relation of Slab to Wall may vary

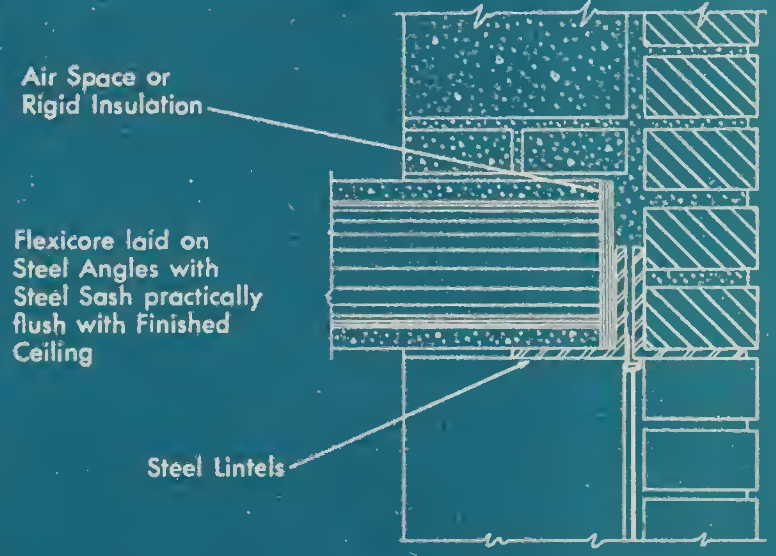
END WALL SECTION


Air space or Rigid Insulation
Flexicore laid on Precast Lintels with the top of Sash well below the Ceiling Slab
Stone, Precast or Poured Concrete Lintels

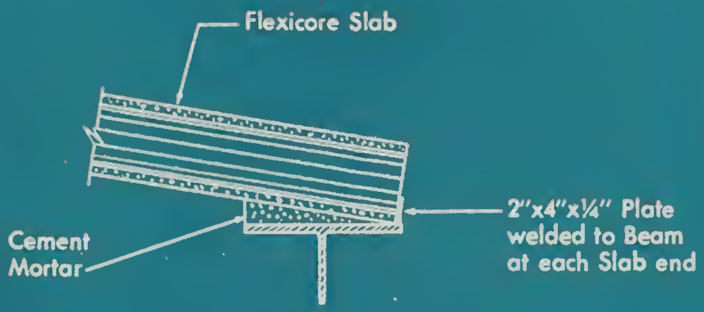
LINTELS


Concrete Grout between ends of Slabs. Paper Cups may be placed in holes if desired
Recommended Bearing=3"

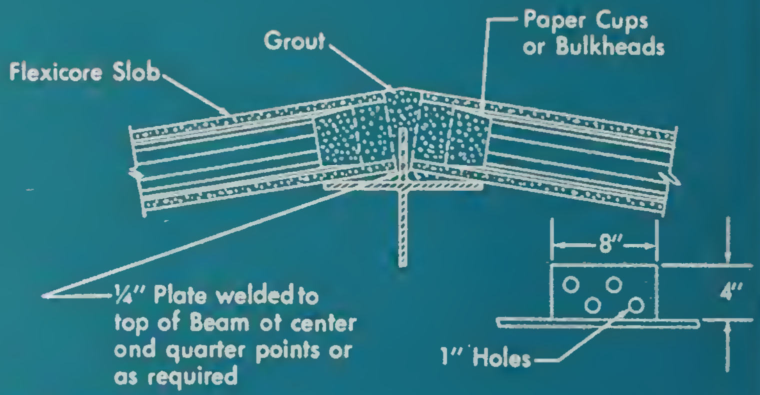
CENTER WALL SECTION


Air Space or Rigid Insulation
Flexicore laid on Steel Angles with Steel Sash practically flush with Finished Ceiling
Steel Lintels

STEEL LINTELS



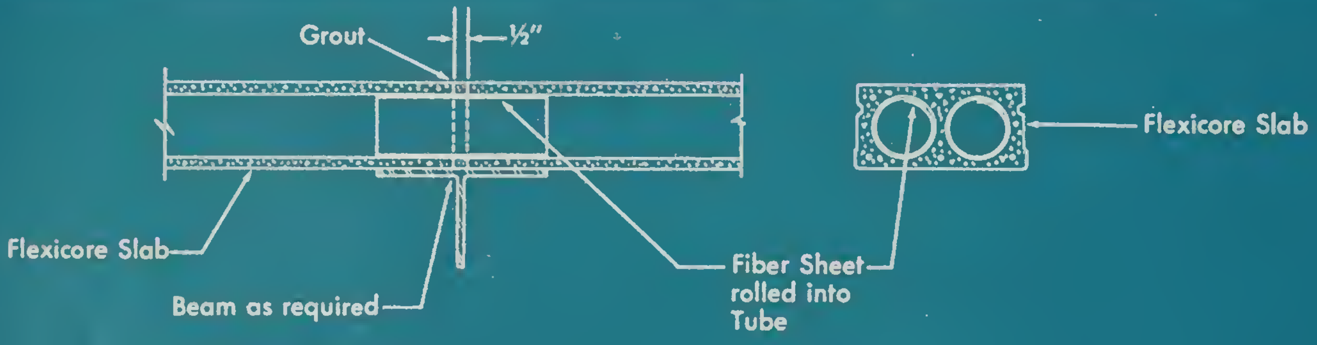
SLAB END SUPPORT FOR PITCHED ROOF


Flexicore Slab
Grout
Paper Cups or Bulkheads
8"
4"
¼" Plate welded to top of Beam at center and quarter points or as required
1" Holes

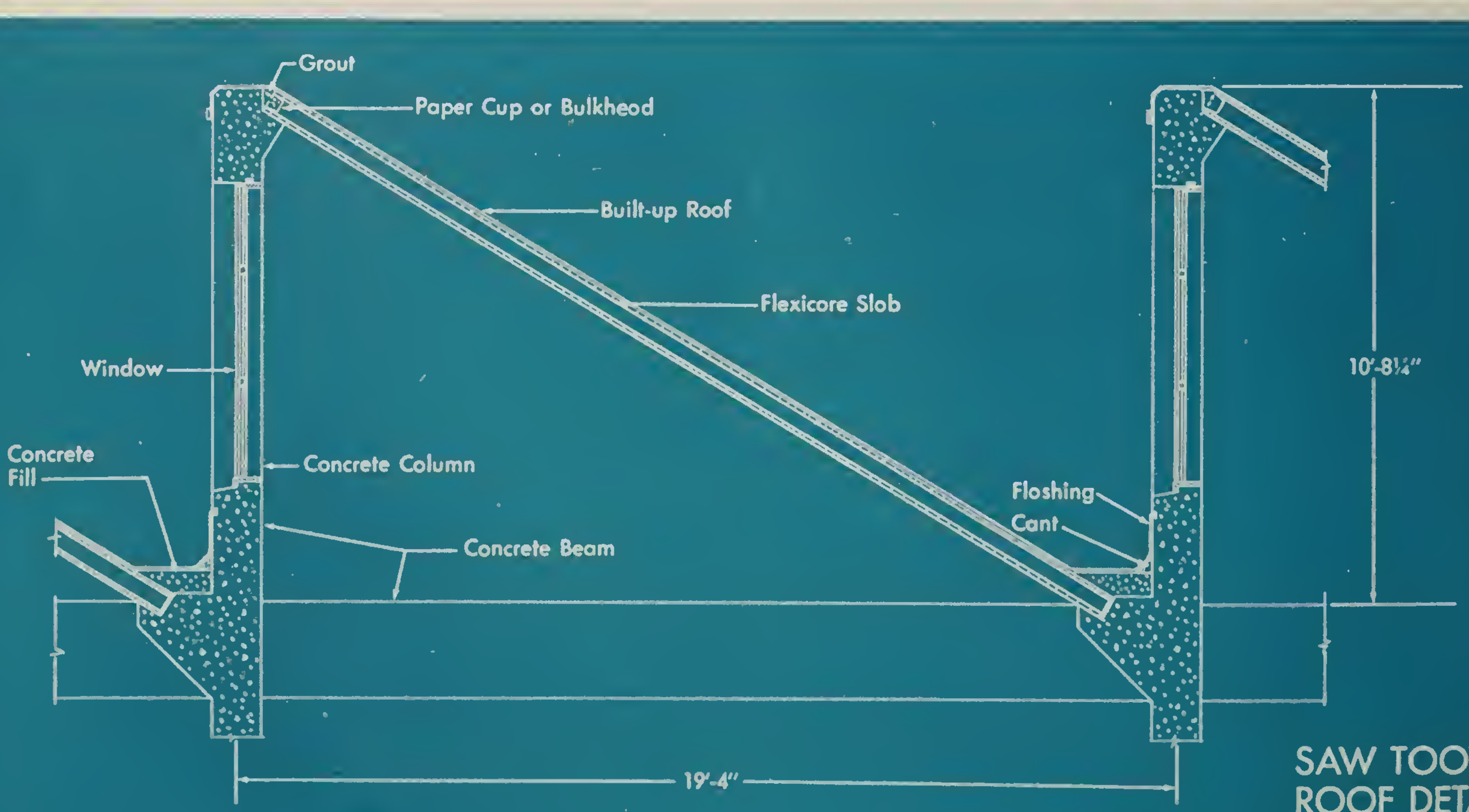
Note: Some Construction for Flat Roof or Floor

Note: On Trusses, extend Gusset above Top Chord

BONDING AT ROOF BEAMS OF PITCHED ROOF

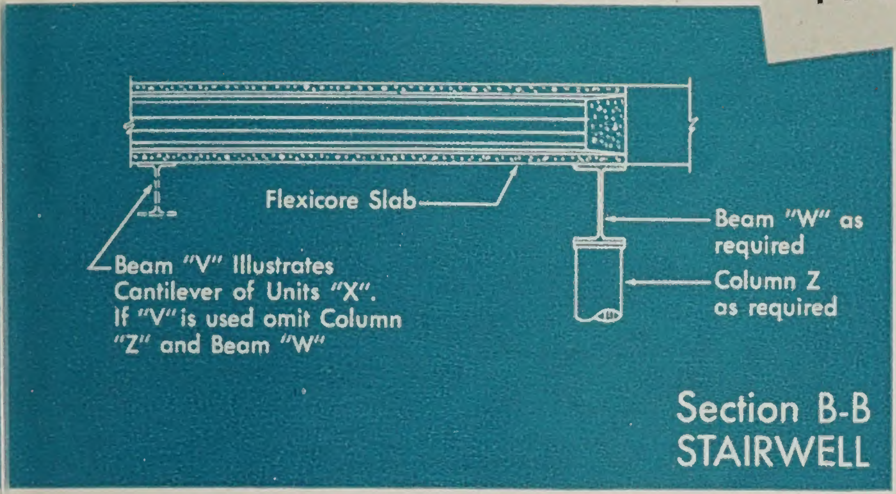


METHOD OF KEEPING HOLES OPEN AT JOINTS

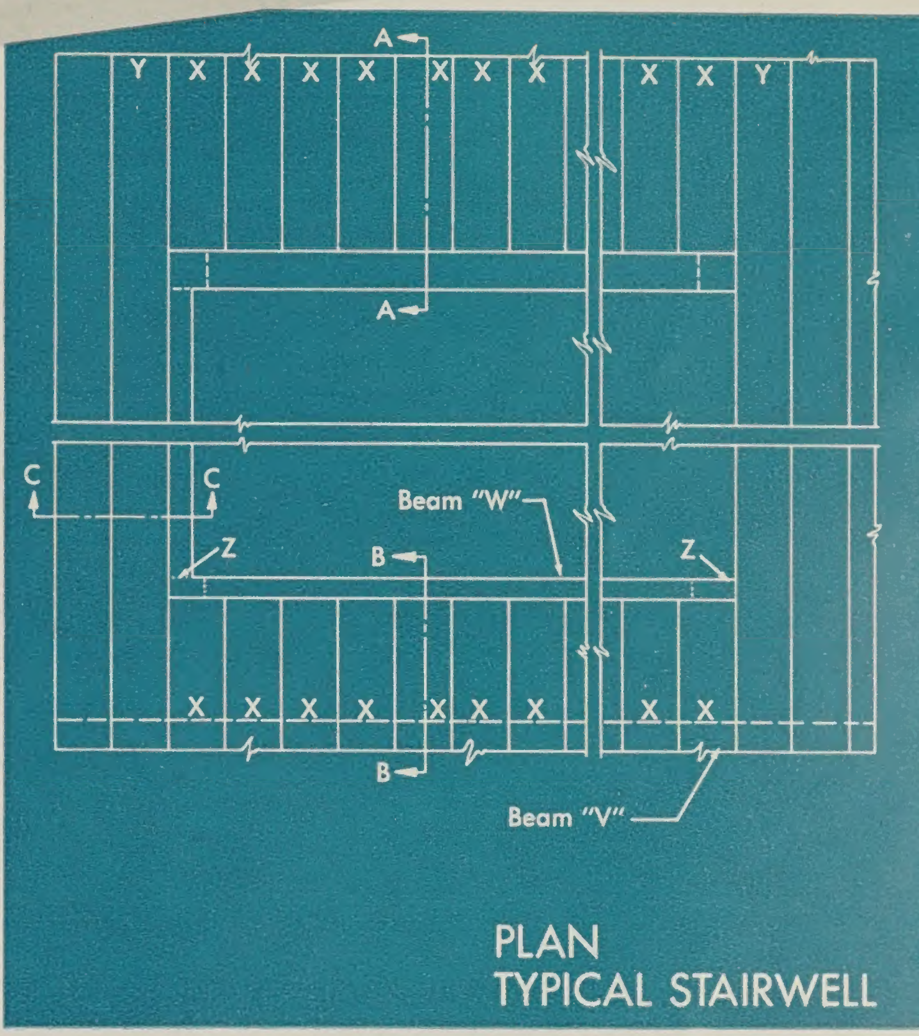


SAW TOOTH ROOF DETAIL

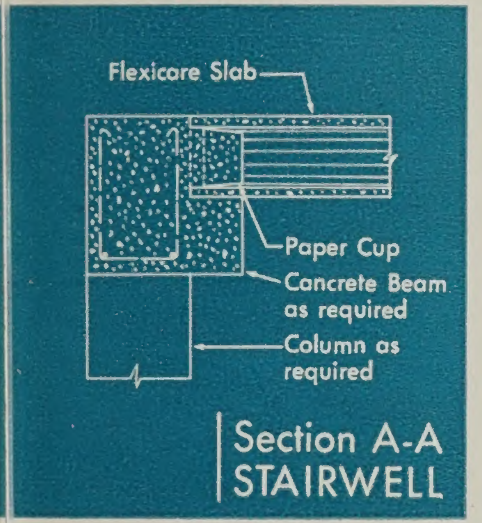
FLOOR AND ROOF OPENINGS


Flexicore Slab
Beam "V" Illustrates Cantilever of Units "X". If "V" is used omit Column "Z" and Beam "W"
Beam "W" as required
Column Z as required

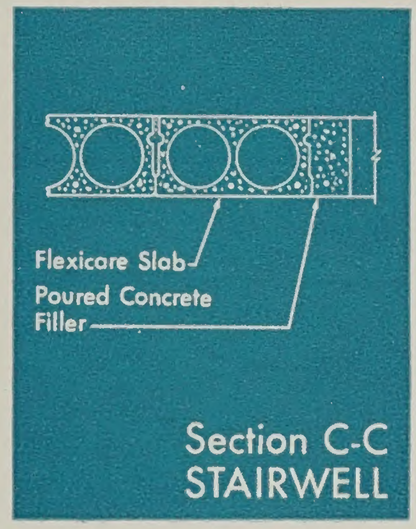
Section B-B
STAIRWELL



PLAN
TYPICAL STAIRWELL



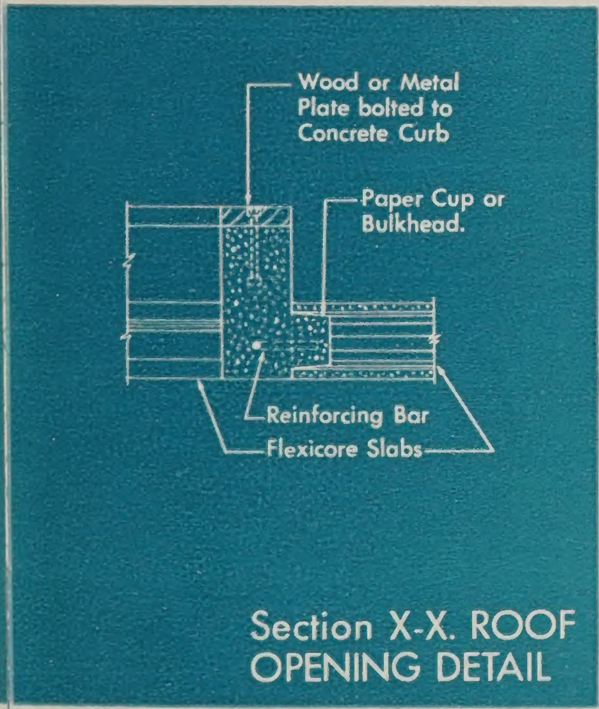
Section A-A
STAIRWELL



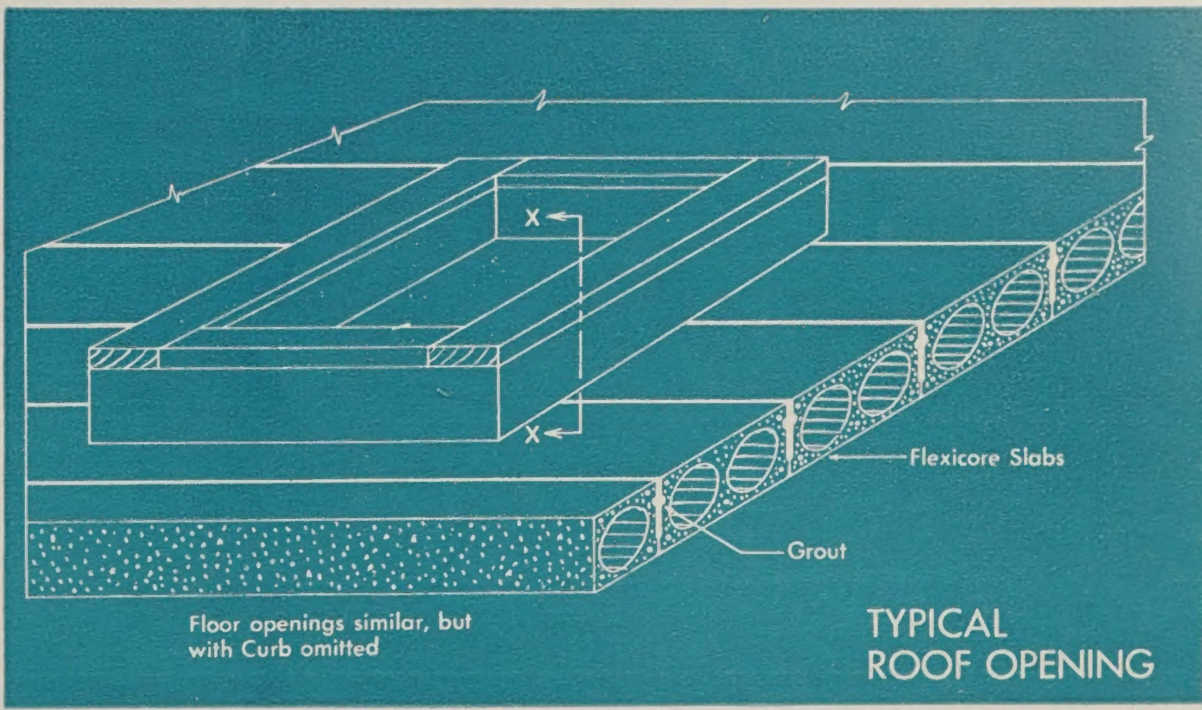
Section C-C
STAIRWELL

Note: The sections above illustrate various conditions which may be encountered in framing Stair Wells in FLEXICORE slabs. Section A-A illustrates the use of a poured concrete header supported on Cols. Z. Header may be reduced to slab depth for short spans. FLEXICORE units "X" may be simply cantilevered if regular support member comes close enough to well opening. Section B-B illustrates use of structural steel header and columns instead of concrete.

Section C-C shows the application of a concrete filler strip which is used when the width or length of the well is not in even multiples of the FLEXICORE slab widths.



Section X-X. ROOF
OPENING DETAIL



Floor openings similar, but with Curb omitted

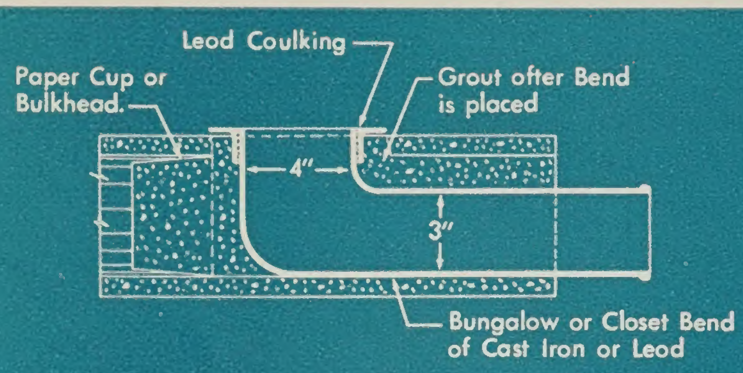
TYPICAL
ROOF OPENING

Note: After grouting FLEXICORE slabs, round or square holes may be cut for ducts, pipes, etc. The grout forms a perfect key and provides practically a monolithic mass which is unharmed by careful cutting of sleeves.

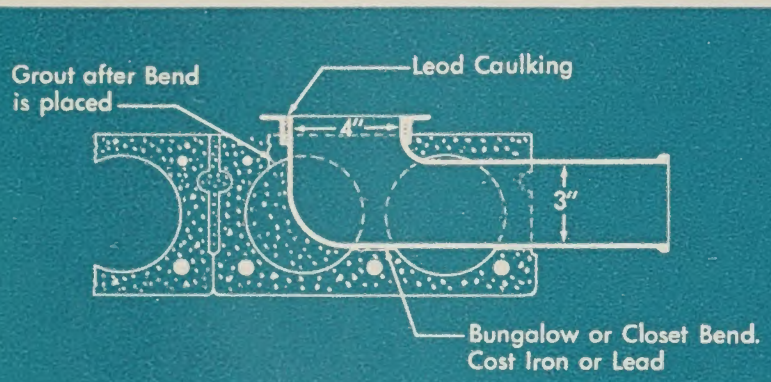
The tension bars may be cut with approval of architect or engineer.

Vent slabs 24 inches square may be placed in floors or roofs where future openings may be required. These slabs are 6 inches thick on all four sides and 2 inches thick for an area 18 inches square in the center of the slab. The central area may be easily cut for small openings or the entire slab removed.

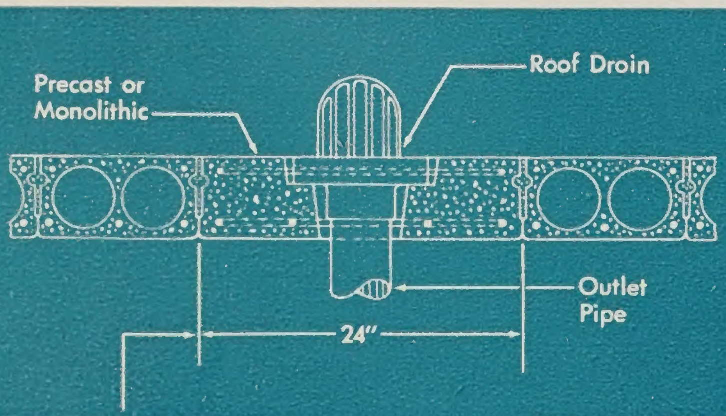
PLUMBING DETAILS


Lead Caulking
Paper Cup or Bulkhead.
Grout after Bend is placed
4″
3″
Bungalow or Closet Bend of Cast Iron or Lead

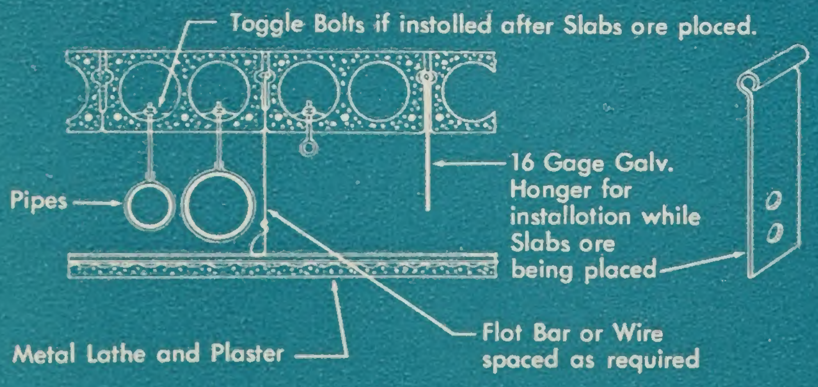
BEND RUNNING WITH CORES


Grout after Bend is placed
Lead Caulking
4″
3″
Bungalow or Closet Bend. Cast Iron or Lead

BEND RUNNING ACROSS CORES

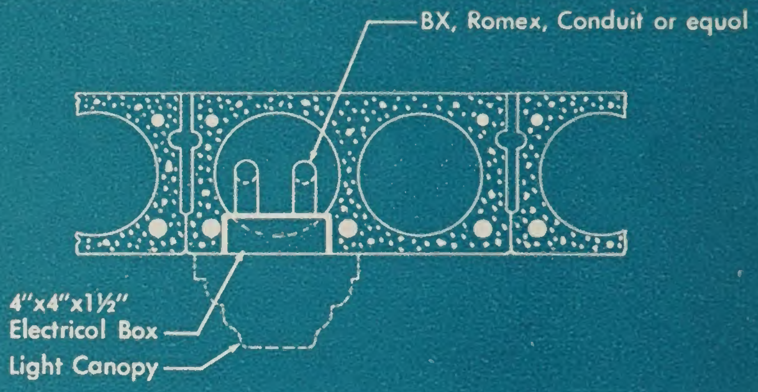


ROOF DRAIN DETAIL


Toggle Bolts if installed after Slabs are placed.
Pipes
16 Gage Galv. Hanger for installation while Slabs are being placed
Flat Bar or Wire spaced as required
Metal Lathe and Plaster

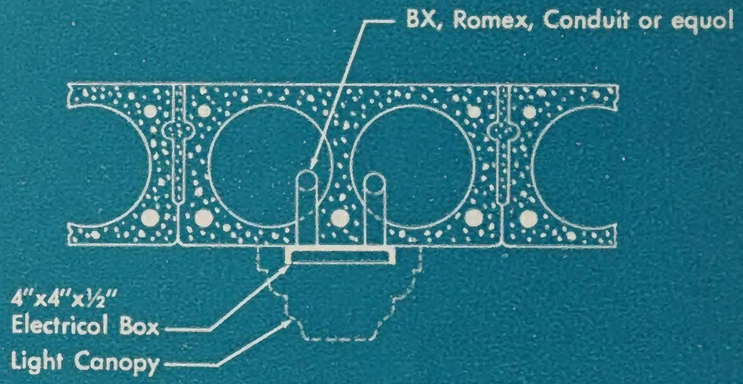
HANGER DETAILS

WIRING DETAILS



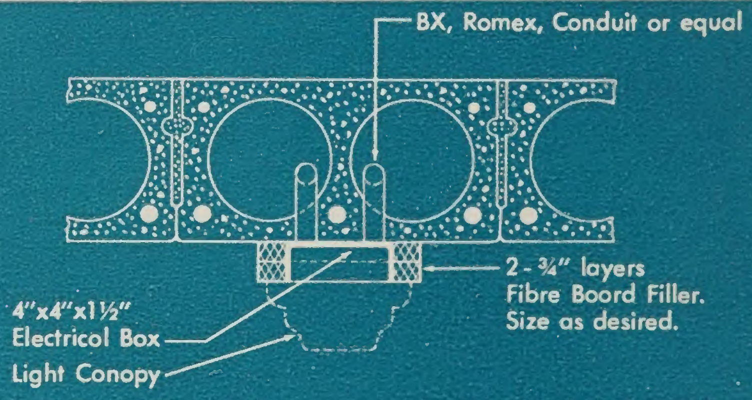
Note: Refer to method of keeping holes open at joints. Center Detail. Page 12

RECEPTACLE FLUSH with CEILING



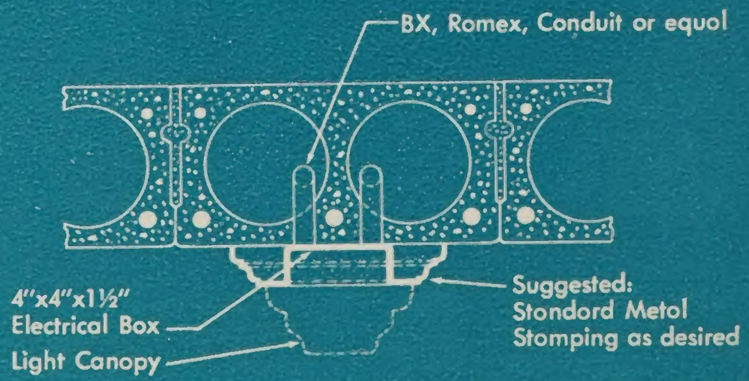
Note: Refer to method of keeping holes open at joints. Center Detail. Page 12

SHALLOW RECEPTACLE DETAIL


BX, Romex, Conduit or equal
2 - ¾″ layers Fibre Board Filler. Size as desired.
4″x4″x1½″ Electrical Box
Light Canopy

Note: Refer to method of keeping holes open at joints. Center Detail. Page 12

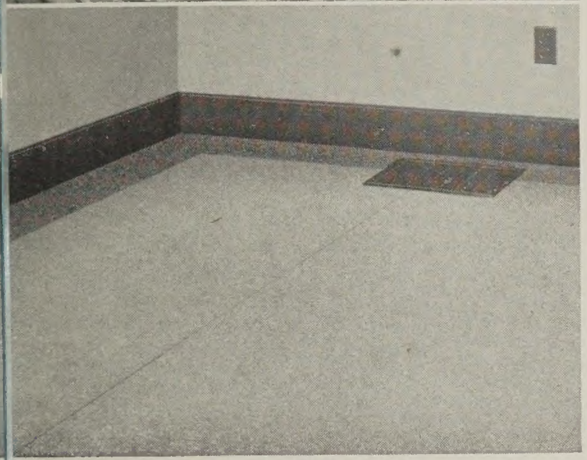
DEEP RECEPTACLE DETAIL


BX, Romex, Conduit or equal
Suggested: Standard Metal Stamping as desired
4″x4″x1½″ Electrical Box
Light Canopy

Note: Refer to method of keeping holes open at joints. Center Detail. Page 12

DEEP RECEPTACLE DETAIL

flexicore floor slab provides perfectly flat surface for any type of floor covering



FLEXICORE slab units are aligned against steel bars or angles and then grouted in this true-flat position, as described on Page 8. As a result the entire floor surface is flat and all the FLEXICORE units are in the same plane.

FLEXICORE floor flatness makes possible the application of many types of finish-floors. Wood strip flooring is usually attached to sleepers which are bolted to U-clips previously inserted between slabs. Padded carpeting or wood block may be applied directly to the slab. If linoleum, rubber or asphalt-tile, etc., are applied, grind slabs or use a thin underlayment. Terrazzo not exceeding 1½″ thick also may be applied. The illustrations show some typical floor coverings on FLEXICORE floors. Note the wide wood stripping at the upper left . . . and cork, lower left.

how to specify **flexicore** floor and roof slab

scope

The work included is the furnishing, delivery and erection of the precast reinforced floor (or roof) slabs directly on bearing surfaces prepared true to line and grade under other items of the contract.

type of precast slab

The units shall be equal to FLEXICORE Floor and Roof Slabs (cross section size 6″ x 12″ with 2 round hollow voids running lengthwise), such as developed by Price Brothers Company, Dayton, Ohio, in lengths as shown on the framing plan. They are to be reinforced by the manufacturer to carry a uniform live load of _____ lbs. per square foot.

materials

The reinforcing steel shall be hot rolled rods with a yield point of 50,000 lbs. or the equivalent.

All concrete materials shall be clean and properly graded and the resulting concrete shall have a minimum compressive strength of 3750 lbs. per sq. inch. Where stresses do not exceed those for a 40 lb. live load on a 20 ft. span (as shown on the live load design chart), light weight aggregate may be used having a minimum compressive strength of 2750 lbs. per sq. inch.

The slabs shall be cured by the manufacturer by keeping them damp for seven days (for normal Portland cement) or by the equivalent of this in steam curing.

installation

Installation of the precast units is to be made by leveling the ceilings perfectly and keeping the units at right angles to bearing walls in all rooms where they will be exposed in the finished ceiling. The slabs shall be grouted by a mixture of not less than one part cement to three parts fine sand, care being taken to see that the joints are completely filled. This contractor shall cooperate with other trades in permitting them to insert hangers, electrical outlets, etc. He shall cut holes through the slabs for the mechanical branches, where same are shown, or where the mechanical contractors give instructions and dimensions for same in time so that the work can be done by this contractor.

frame for openings

Openings such as linen chutes, pipe shafts and vents two feet wide or larger shall be framed in concrete, properly reinforced, or in steel by the contractor as shown on the plans.

Finally all work shall be neatly and fully finished and all surplus materials and rubbish removed from premises.

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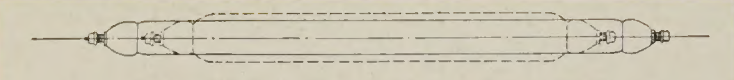
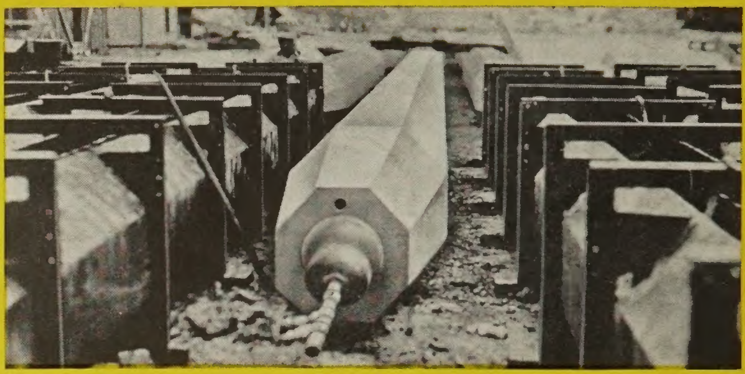
other applications for **flexicore***



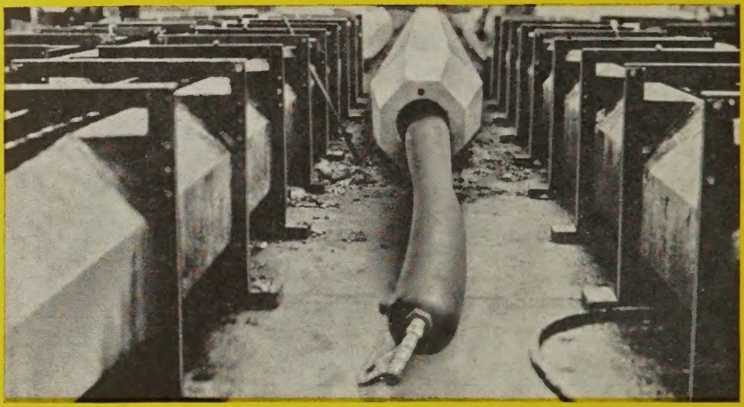
Dotted line shows Flexicore tube inflated
Solid line shows shape of tube deflated

The natural advantages of hollow construction made possible by the patented Flexicore method provide unlimited application. In addition to floor and roof slabs, the Flexicore method is used for: hollow concrete bearing piles; hollow concrete sheet piling; straight or curved conduits; hollow poles and posts; jet holes for concrete caissons; drain holes under turbine cases in hydro-electric plants; hollow concrete curbing; and any other product or application where it is advantageous to lighten the structure or provide an opening for use.

The rubber tube used in making Flexicore products expands uniformly under either air or water pressure to a predetermined diameter and at the same time decreases in length. Deflation of the rubber tube core reverses the action decreasing the diameter as the length increases. For an increase in diameter of 30% there is a decrease in length of approximately 15%. Flexicore tubes are available in diameters up to 24″ . . . information on availability will be furnished on request.



Above: Flexicore tube is shown still inflated after form has been removed. *Below:* Extension of Flexicore tube after deflation.



THE FLEXICORE CO., INC.
220 EAST 42nd STREET
NEW YORK 17, N. Y.

Specify precast, hollow-cast **flexicore** for time saving, weight saving
STRENGTH • PERMANENCY • FIREPROOFING
Adaptable to modern building construction

* A development of Price Brothers Co., Dayton, Ohio • Pat. and Pat. Pending

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